



**Metal Theft Effects on
Michigan Critical Infrastructure
BG Mike McDaniel**

**Michigan Senate Committee on Economic Development and
Regulatory Reform
22 February 2008**



Why is Metal Theft a Homeland Security Concern ?

- Critical Infrastructure (CI) is a primary Homeland Security issue.
- Critical Infrastructure is classified in 17 sectors, of which Ag and Food Supply, Water Systems, Energy, and Communications are the primary systems.
- CI sectors are interconnected, and an attack on one system can affect many others.
- These secondary or "cascading effects" can cause greater harm than the original attack or event.



Potential Disaster

Case study:

Detroit's west side, 2007, scavengers knock power transformers off poles near an abandoned building, then break them open for metal to sell for scrap. Releases oil containing PCBs. Response required hazard material clean-up.

- **Also stolen were metal pipes from inside the abandoned building which caused a gas leak.**



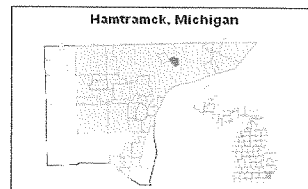
Potential Disaster

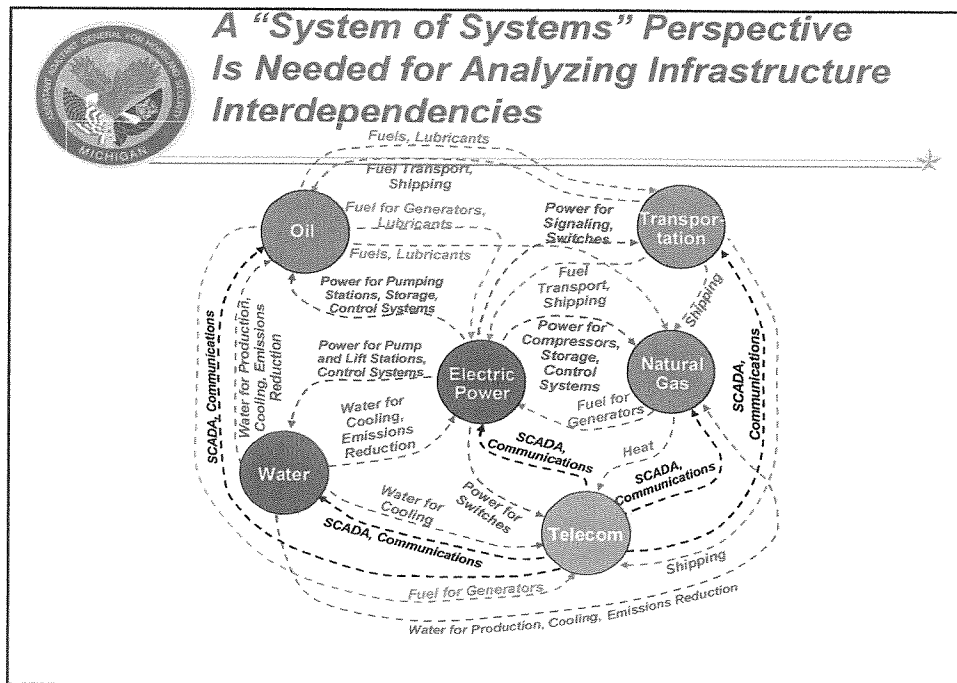
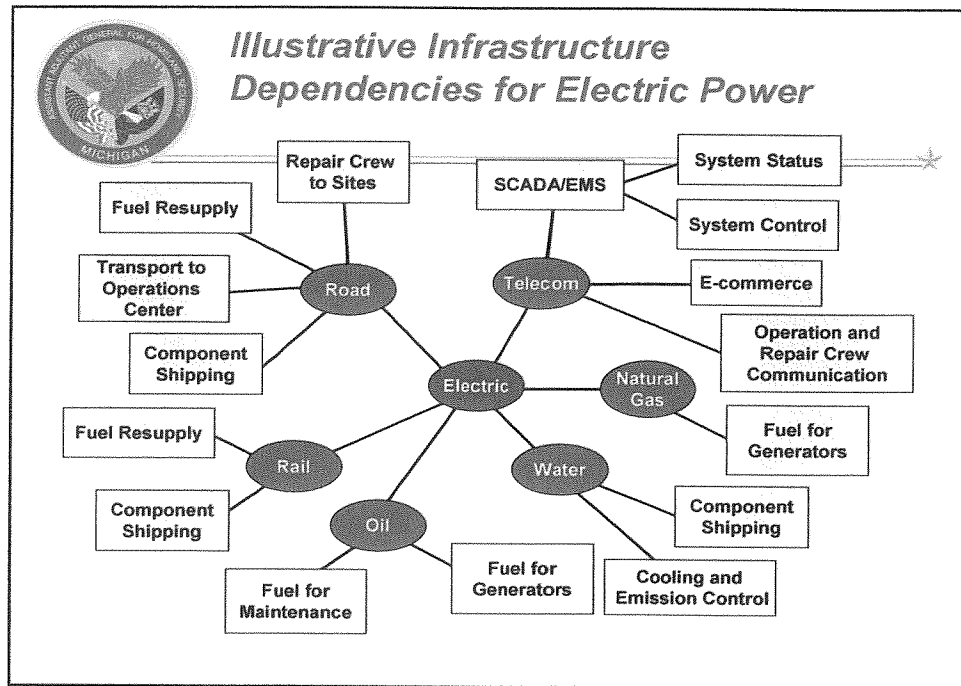
Case study:

- **Hamtramck, summer 2007, one AT&T live cut of a major cable disrupted all service to approximately 11,488 citizens. The repair of the line was quite extensive based on the preventive tactic of burying the line rather than pole mounting it. The operation required lateral drilling based on protecting current structures.**

Halting

- **Emergency Communications**
- **Credit card transactions**
- **Commerce in general**







Detroit compared to other areas in Michigan

- AT&T reported 450 live cuts in the Detroit area in the past year.
- Other regions in the state report 25 to 50 live cuts during the same time period. (Grand Rapids, Lansing, Benton Harbor)

(Live cuts are active lines that show up on the control board when cut.)



Victims

Three main victims of metal theft in Michigan - AT&T, Detroit Edison and Consumers Power. Smaller corporations and businesses are also suffering losses. Virtually all elements of the community are being effected:

- Public utilities, wire (power, phone etc.).
- Abandoned buildings & New Construction (wiring, pipes, fixtures, etc.).
- Agriculture (water irrigation piping).
- Transportation (railroad signage and guards).
- Cellular transmissions (cell towers components).
- Schools and public buildings (wiring, pipes, etc.).
- Any industry heavily reliant on metal fixtures - ex Marathon Oil, seven incidents of fenced perimeter breached to steal metal scrap; one incident involved the theft of a vehicle from the site.



Railroads

- Sept 2007: Pontiac: copper wire stripped from 6 traffic control switching stations; rendered inoperable... thieves caught
- Nov 2007: Indiana: aluminum railroad crossing arms discovered at salvage company; trailer that hauled material had MI plate.
- Tank cars routinely carry HCl, Propane, Chlorine,



Agriculture

- Aluminum irrigation pipe stolen from a Montcalm County farm
- Two reported cases in Tuscola County, Dykhouse Pickle Co. & Michigan Sugar Co.
- Michigan Farm Bureau estimates claims at near \$2 million



Emergency Dispatch/ 911

- Loss of phone lines into a center will disable center, requires phone company to reroute calls
- Calls from cell phones lack location data
- Reliance on independent power required



Memorials & markers

- 3 bronze plaques stolen from St John's Marsh conservation area in St. Clair County.
- 350-pound bronze angel stolen from cemetery in Detroit (recovered)



Power

- Copper theft from DTE cost company between \$6 - 7 million in last 2-3 years
- In 2007, DTE suffered over 500 cases of copper theft



Cascading Effects from Loss of Power, revisited.

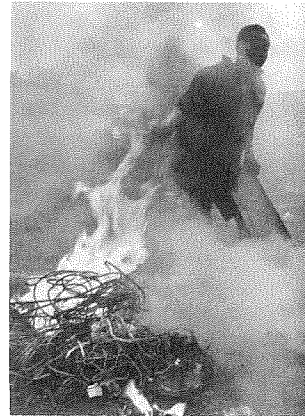
Based on August 14, 2003 Blackout:

- Loss of water system
- Spoilage of perishables
- Disruption of commerce
- Disruption of transportation, fuel, traffic lights
- Diminished communications
- Manpower intensive
- Increased criminal activity



Other potential secondary effects

- **Burning the protective shielding that covers electrical and phone wires/cabling**
- **Air release fumes thick with dioxins and heavy metals.**
- **Ground (Burn pit) release consists of thermoplastic, asbestos, rubber, lead, neurotoxin and cadmium.**
(Substances eventually released into the ground water)



Conclusions

- **Self-inflicted Injury: We spend millions on CI Protection to guard against Natural Disaster or Terrorist Attacks, and the same result could be created by a scrap thief.**
- **Cascading Effects: Like the 2003 Blackout, the loss of a key CI component could have secondary effects on other infrastructure networks.**
- **As state's CI ages, replacement costs increase. Metal theft will add to, and/or accelerate, the increased costs.**
- **Deterrent to new business: CI loss not only increases cost to existing business, it deters new investment.**